International Bulletin

Source:	MTWI-06-04
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Date:	September 01, 2004
Subject:	IND310 update to technical and user guides

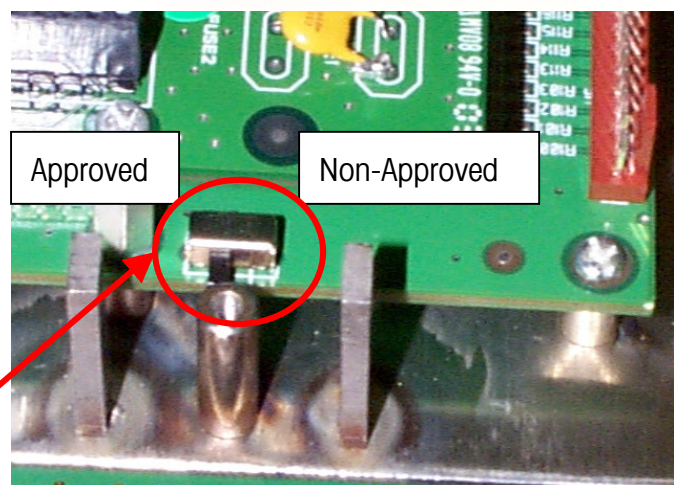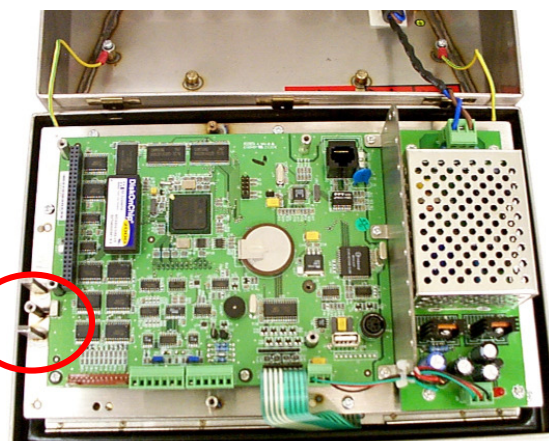# IND310 Technical/User Guide Addendum

This addendum will address six issues not covered in the technical and user guides: Use of the Metrology Switch, Legal for Trade settings, Updating the IND310 software, Using the Com 1 Current Loop, Clearing the Alibi & Transaction tables, Reset and Power Up/Power Down Considerations.

Metrology Switch

The metrology switch, which is sealed per Weights and Measures, controls access to the scale submenu of the setup tree. This submenu includes functions such as calibration, filter settings, tare settings and others. If the switch is in its approved position the user may enter setup, but will be unable to enter the scale setup submenu, shown by the absence of a box with a plus sign next to the scale submenu. In order to access the scale setup submenu, escape out of the setup menu, change the metrology switch to the non-approved position and then enter the setup menu screen again.
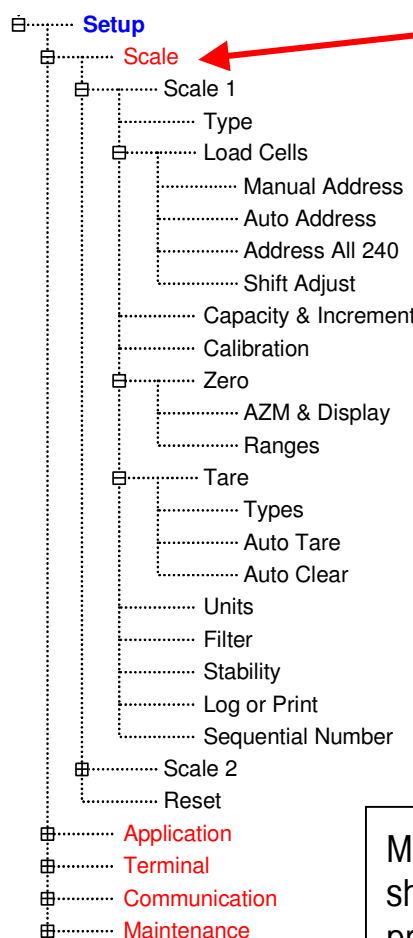

The scale submenu is accessible (may be expanded) only when the Metrology switch is in the non-approved position.

Approved   Non-Approved

Metrology switch shown in the approved position.

- Setup
  - Scale
    - Scale 1
      - Type
      - Load Cells
        - Manual Address
        - Auto Address
        - Address All 240
        - Shift Adjust
      - Capacity & Increment
      - Calibration
      - Zero
        - AZM & Display
        - Ranges
      - Tare
        - Types
        - Auto Tare
        - Auto Clear
      - Units
      - Filter
      - Stability
      - Log or Print
      - Sequential Number
    - Scale 2
    - Reset
  - Application
  - Terminal
  - Communication
  - Maintenance

International Bulletin

Legal for Trade Settings

Legal for Trade setting appear under the setup menu in Scale / Scale1 / Type. The IND310 operates within the weights and measurement rules associated with its Legal for Trade settings.
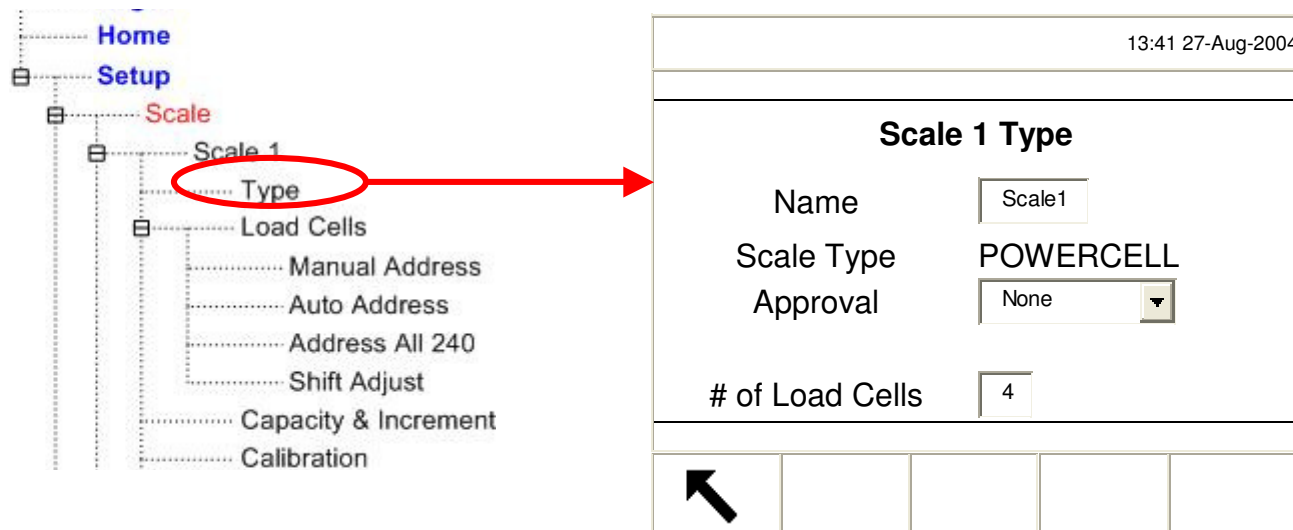

The choices for approval are: None, Australia, Canada, OIML and USA. Please ensure that you select the appropriate approval type so that the IND310 will display weight values in accordance with your local weights and measures rules. Selection of the approval from None to one of the above choices also enables use of the security switch and its settings as discussed at the top of this document.

Updating the IND310 software

Software updates are performed with a USB memory stick. Only a METTLER TOLEDO provided USB memory stick (available as CIMF number 71208113) should be used to perform this activity. The following procedure is used to perform the update.

1. Using a personal computer, download the latest software (sabre.tar) as well as the executable file (tar) and transfer the files onto the USB memory stick (see "Using a USB memory stick" below).

2. Remove the front panel from the IND310 terminal and place the USB device in the USB connector on the main PCB. Place the Metrology Switch in the non-approved position.

International Bulletin
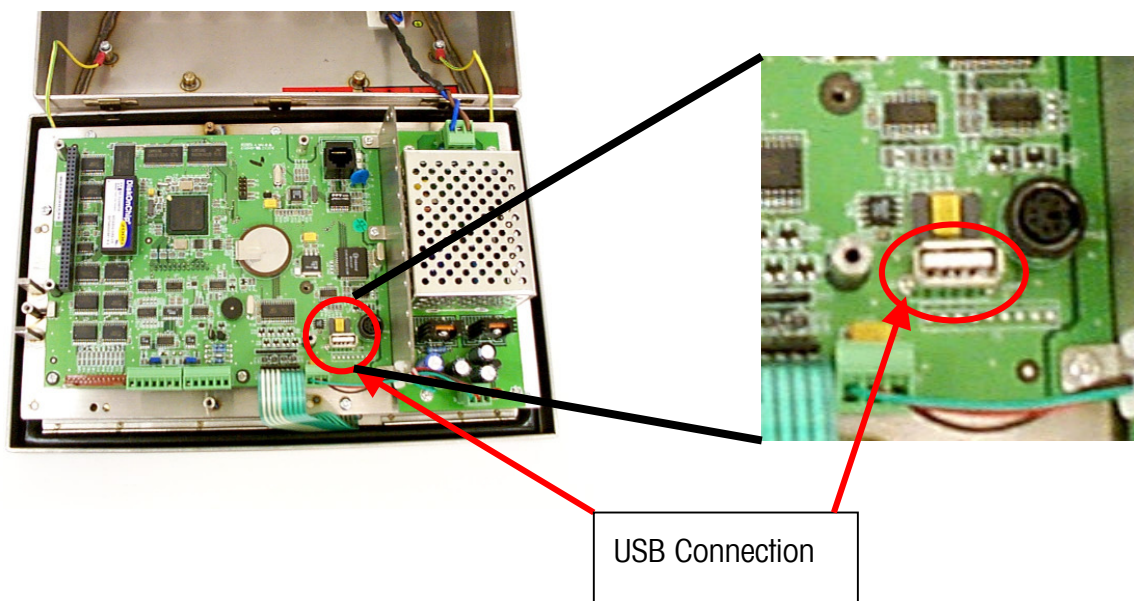
USB Connection

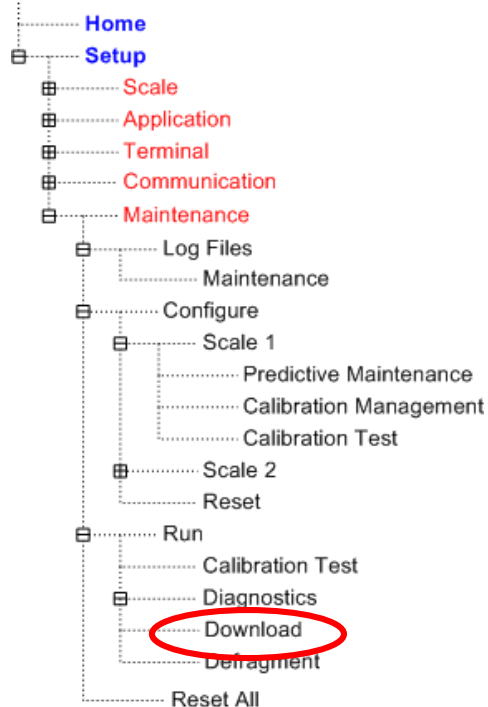Mettler-Toledo USB Memory Stick (Part Number 71208113)


<u>Using a USB memory Stick</u>:

This 64Mb USB memory stick plugs into your PC's USB connector and will be recognized by Windows 2000 or XP. It appears as a removable disk under the My Computer icon. Copying the sabre.tar and tar files to this stick is no different than copying a Windows file to a folder on your hard-drive. Just open the removable drive folder for your memory stick to drag and drop the sabre.tar and tar files.

3. Replace the front panel.

4. Power up the IND310.

5. Go to the setup menu and access MAINTENANCE / RUN / DOWNLOAD

International Bulletin

6. Select USB from the "Download Port" drop down list.

13:41 27-Aug-2004

Download Program

Download Port   USB

Status

Download Status messages shown here
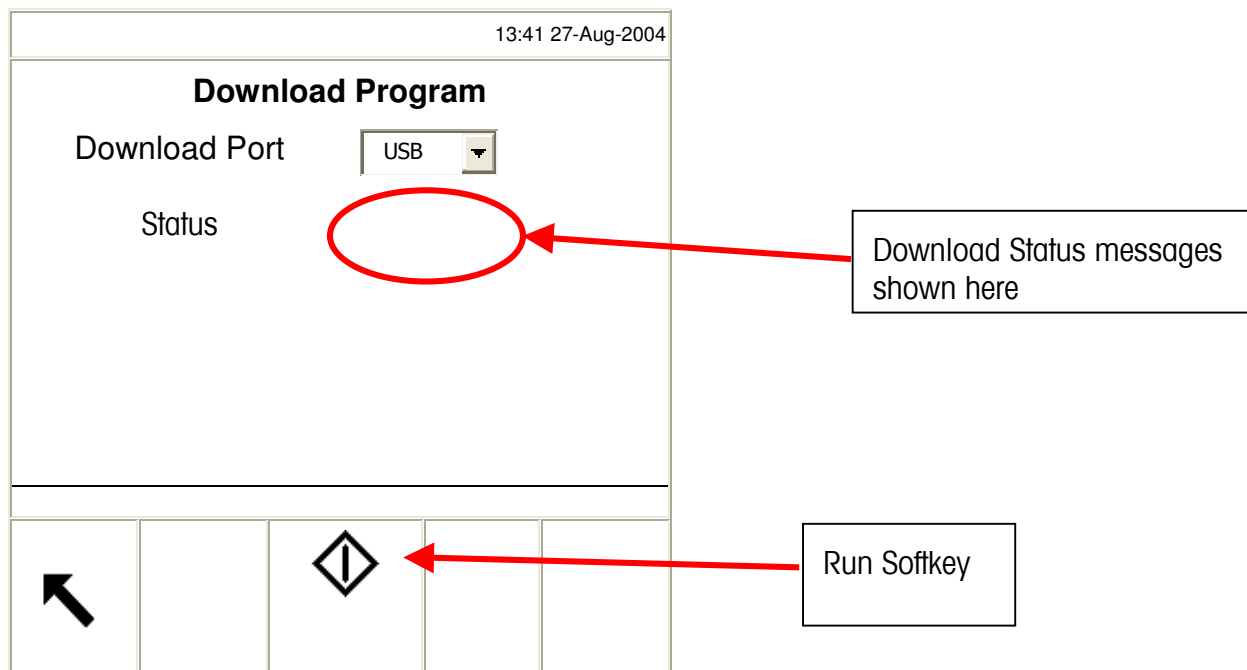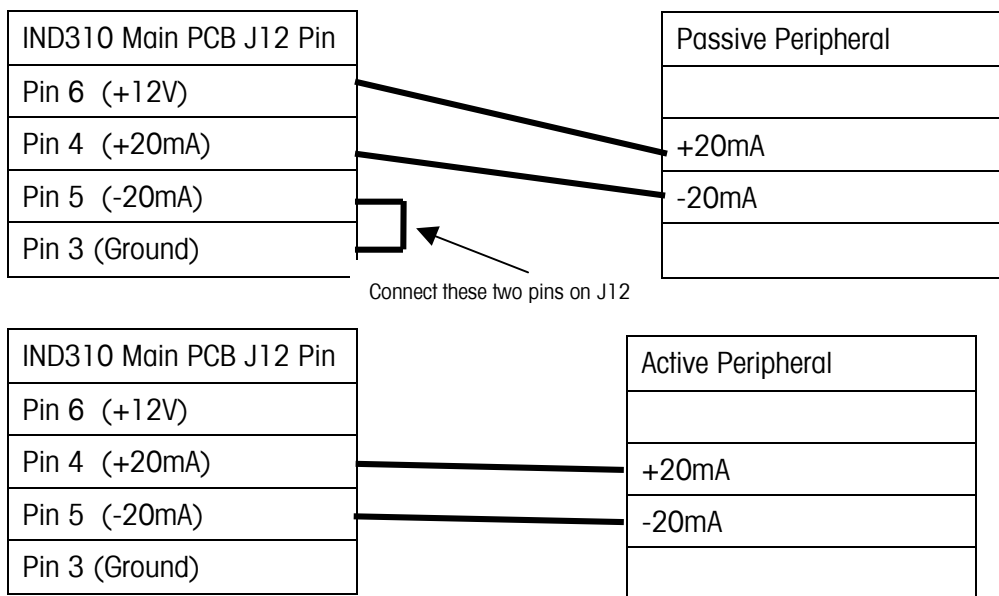
Run Softkey

7. Press the run softkey.

8. The message "Connection to USB" is displayed, followed by the message "Downloading. Please Wait". This process may take 5 to 10 minutes.

9. Then the message box "Download successful. IND310 will automatically reboot" is displayed.

10. The boot up procedure may take 2 to 3 minutes longer than usual.

11. After reboot, remove the USB device.

12. Reconfigure the unit and return the Security Switch to the Locked position.
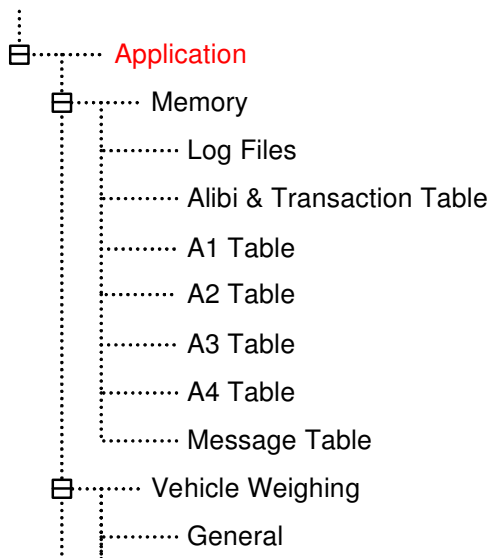
COM1 20mA Current Loop

Current loop systems use flow of current to transmit digital information. There are two types of 20 mA current loops: Active and Passive. Active systems have the current/voltage source built into the circuit. Passive systems require an external current/voltage source to complete the circuit. Normally one side of the current loop is active and the other passive. Two active current loop systems can not be connected together. The IND310 current loop is a "passive" current loop system, i.e. it does not have a current or voltage source built in. However, the COM1 connector supplies a +12V source to activate the system. The advantage of this arrangement is that the IND310 can be connected to a passive peripheral by using the +12V source on the COM1 connector or to an active peripheral by connecting the +20mA and -20mA lines to the respective lines of the peripheral. The following table shows how to connect the IND310 current loop to a passive and an active peripheral. Note for a passive peripheral that you need to jumper pin3 and pin 5 on J12 of the IND310 main PCB

IND310 Main PCB J12 Pin	Passive Peripheral
Pin 6 (+12V)	
Pin 4 (+20mA)	+20mA
Pin 5 (-20mA)	-20mA
Pin 3 (Ground)	

Connect these two pins on J12

IND310 Main PCB J12 Pin	Active Peripheral
Pin 6 (+12V)	
Pin 4 (+20mA)	+20mA
Pin 5 (-20mA)	-20mA
Pin 3 (Ground)	

Clearing the Alibi & Transaction tables

The user many want to clear the transaction table after the terminal has first been installed or in North American applications, where the user has downloaded the existing data and wishes to continue with a clear table. Clearing the Alibi & Transaction tables may take up to 3 minutes. In addition to clearing the data, the process runs a database defragmentation routine. A message will indicate 'Please Wait' while the operation is running and will disappear when the task is complete.

Application
  Memory
    Log Files
    Alibi & Transaction Table
    A1 Table
    A2 Table
    A3 Table
    A4 Table
    Message Table
  Vehicle Weighing
    General

13:41 27-Aug-2004

Alibi & Transaction Table

Active Table (s)   Alibi & Transaction

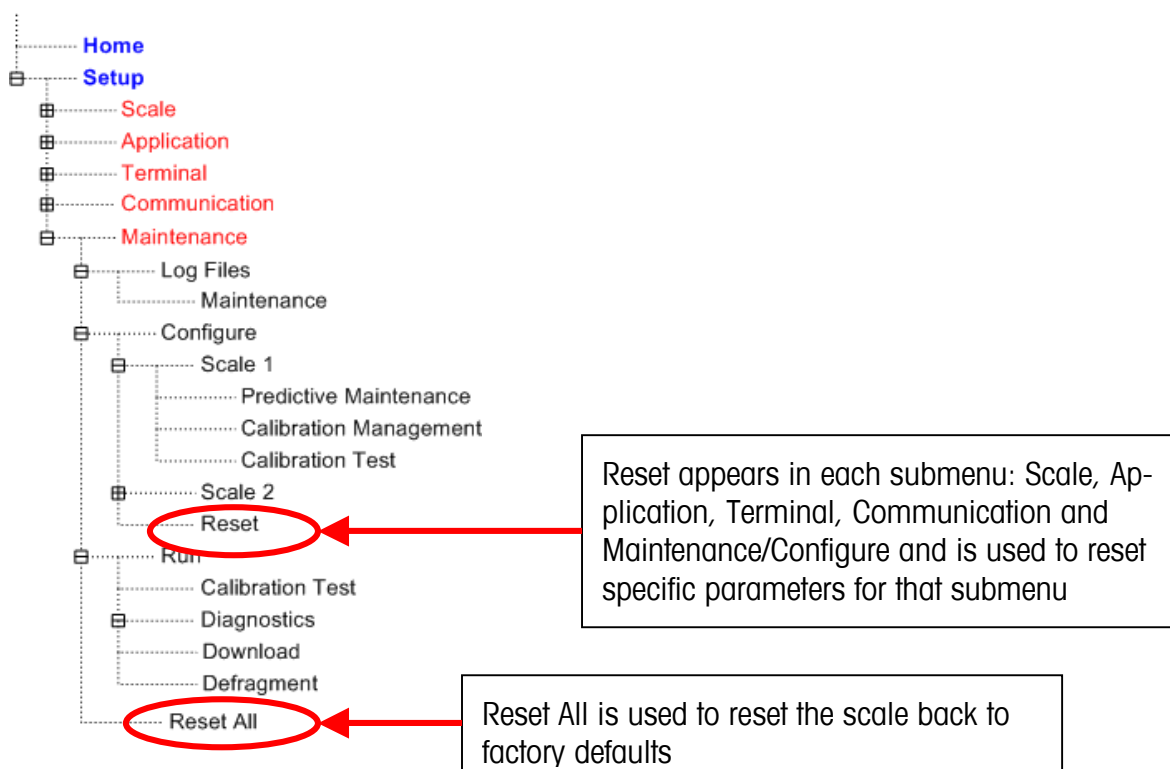| #1 | Vehicle ID | #2 | Vehicle Desc |
#3	None	#4	None
#5	None	#6	None
#7	None	#8	None
#9	None	#10	None

It can take up to 3 minutes to perform this operation.

Reset

Reset in the setup tree may be performed at individual submenus or at the Maintenance menu as RESET ALL.

Reset appears in each submenu: Scale, Application, Terminal, Communication and Maintenance/Configure and is used to reset specific parameters for that submenu

Reset All is used to reset the scale back to factory defaults

Reset for a submenu will reset only parameters associated with that submenu back to factory default. In the Scale submenu there are several things that are **not reset**: Scale Type, Capacity, Increment, and Scale Calibration Data. Reset All resets all IND310 parameters back to factory default, but does not affect Scale Type, Capacity, Increment, and Scale Calibration Data. The configuration of data tables is reset, but the data within tables (Vehicle ID, A1-A4) are also **not cleared** by the reset function. Data within the tables can only be cleared within the Table Editing screens.

Power Up/Power Down Considerations

When turning power on or off to the IND310, we recommend that peripheral components such as printers should be off during that operation to avoid receiving any extraneous characters that may be generated by the IND310 serial port. The proper power up sequence is:

1. Apply power to the IND310.

2. Apply power to peripherals such as printers.

The proper power down sequence is:

1. Turn power off to peripherals such as printers.

2. Turn power off to the IND310.